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REMARKS

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I.   INTRODUCTION

Claims 1-8 are pending in the present application. In view of the following remarks, Applicant respectfully submits that all presently pending claims are in condition for allowance.

II.   THE 35 U.S.C. § 103(a) REJECTION SHOULD BE WITHDRAWN

Claims 1-8 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Biswal et al. (U.S. Patent No. 6,477,399) in view of Poliakov et al. ("Server-based Approach to Web Visualization of Integrated 3-D Medical Image Data" Proc AMIA Symposium, 2001, pp. 533-537).

Claim 1 recites, "[a] method of computer-aided extraction of quantitative information, the method comprising the steps of: acquiring primary data from an object to be examined; processing the primary data on the basis of a primary parameter set to determine a primary result; determining a confidence interval with respect to the primary result; displaying the primary result and the confidence interval; *adjusting the primary parameter set on the basis of a user input, the adjusting being within a predetermined range; reprocessing the primary data on the basis of the adjusted primary parameter set to determine a secondary result*; and displaying the secondary result."

Although the Examiner rejects the claims under Biswal, the Examiner bases the majority of the rejections on Jesmanowicz (U.S. Patent No. 5,603,322), which is incorporated by reference in Biswal. Biswal discloses "[a]n EPI pulse sequence is performed by an MRI system which acquires images of the brain over a time interval during which the subject performs a function or is stimulated in a pattern." (*See Biswal*, Abstract.). .

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In one embodiment (hereinafter "embodiment 1"), Jesmanowicz analyzes MRI data of the brain to determine which, if any region or regions are active in response to an applied stimulus. (*See* Jesmanowicz, col. 2, ll. 41-44). Jesmanowicz discloses that "the invention includes acquiring a series of MRI image data sets of a subject's brain using fast NMR pulse sequences repeated over a period of time during which a stimulus is applied to the subject and removed in a selected temporal pattern." (*Id.* at col. 2, ll. 45-49). The temporal changes of the NMR signal intensity indicate the temporal pattern of the applied stimulus and reveal the active regions of the brain.

In another, separate embodiment (hereinafter "embodiment 2"), Jesmanowicz discloses that a neurologist enters a reference pattern or selects "as a reference pattern the time varying NMR data for one voxel which is observed to follow the selected stimulation pattern." (*Id.* at col. 3, ll. 7-10). The correlation between this reference pattern and the other voxels (i.e. not the voxel selected) is then calculated and the results displayed.

The Examiner refers to Jesmanowicz's disclosure of the input of a reference pattern by the neurologist to meet the recitation in claim 1 of "*adjusting the primary parameter set on the basis of an input.*" Applicants respectfully disagree with the Examiner's interpretation of the claimed invention. The input of a reference pattern is not an adjustment of a primary parameter set, on the basis of which the primary data was processed.

Instead, Jesmanowicz discloses that it is possible for the neurologist to use the results of the embodiment 1 as a reference signal. (*Id.* at col. 3, ll. 7-10). This reference signal corresponds a voxel in which the NMR temporal data corresponds to the intermittent pattern of the applied stimulus. That is, the neurologist chooses a voxel that has temporal NMR data corresponding to the selected stimulation pattern as the inputted reference pattern. Jesmanowicz uses this reference pattern to calculate the correlation of other voxels to this reference pattern. However, the reference pattern cannot be considered a primary parameter in the context of claim 1 because the reference pattern

was not used to determine the temporal NMR data of the embodiment 1. Claim 1 recites "processing the primary data on the basis of a primary parameter set to determine a primary result." The temporal NMR data of embodiment 1 is the result of the analysis performed in that embodiment. So, the result of the analysis cannot also function as the basis on which the analysis is carried out.

Jesmanowicz does not disclose any adjustments to the parameters of the analysis performed in embodiment 1. There is no adjusting of a primary parameter let alone a reprocessing of the primary data on the basis of the adjusted primary parameter. That is, Jesmanowicz does not disclose or suggest adjusting the parameters of the analysis of embodiment 1 on the basis of the neurologist's input in embodiment 2.

Applicants understand that the entering of a reference pattern is an input, but this input is not an adjustment of a primary parameter on which embodiment 1 was based. Accordingly, neither Biswal nor Jesmanowicz disclose or suggest "*adjusting the primary parameter set on the basis of a user input, the adjusting being within a predetermined range; reprocessing the primary data on the basis of the adjusted primary parameter set to determine a secondary result*," as disclosed in claim 1.

The Examiner additionally refers to Jesmanowicz's disclosure of a neurologist placing a cursor (316) over a desired portion of an anatomical image of the brain and choosing between time domain and frequency domain data. (*See* 1/11/12 Office Action, pp. 2-3) (referring to Jesmanowicz, col. 11, l. 64 – col. 12, l. 22). This portion of Jesmanowicz describes the ability of Jesmanowicz's system to allow the neurologist to view the time (or frequency) domain graphs associated with the voxels enclosed by the cursor (316). (*See* Id.). Although the neurologist can modify the size of the cursor (316) so that more or less voxels are enclosed by the cursor (316), Jesmanowicz is silent regarding the adjustment of the data pertaining to the voxels "*on the basis of a user input, the adjusting being within a predetermined range*" and reprocessing the data associated with those voxels on the basis of the adjustment "*to determine a secondary result*," as disclosed in claim 1. Instead, Jesmanowicz's disclosure merely describes the ability of

the neurologist to choose what and how much data to display. There is no input by the neurologist that serves as a basis for adjusting voxel data, ultimately resulting in new voxel data. Accordingly, Jesmanowicz fails to disclose or suggest *"adjusting the primary parameter set on the basis of a user input, the adjusting being within a predetermined range; reprocessing the primary data on the basis of the adjusted primary parameter set to determine a secondary result,"* as disclosed in claim 1.

The Examiner correctly acknowledges that Biswal fails to disclose or suggest *"adjusting the primary parameter set on the basis of a user input, the adjusting being within a predetermined range,"* as recited in claim 1. (*See* 1/11/12 Office Action, p. 6). To cure this deficiency, the Examiner relies on Poliakov and states that Poliakov "has been cited to disclose the limitation of adjusting the primary parameter set on the basis of an input…reprocessing the primary data on the basis of the adjusted primary parameter set to determine a secondary result; and display the secondary result." (*Id.* at p. 3).

Poliakov discloses a high performance graphics server accepting commands from web clients to load, process, and render 3D image volumes and models. (*See* Poliakov, Abstract). User interactions on the client side result in commands being sent to the server to manipulate the 3D scene. (*See* Id.). The Examiner refers to Poliakov's disclosure of a Java-based applet to meet the above-cited portion of claim 1. (*See* 1/11/12 Office Action, pp. 6-7)(referring to Poliakov, p. 535 "Java-based applet"). However, this portion of Poliakov merely describes a Java web-application that allows the user to interact with the 3D image, which results in commands being sent to the server. As an example of such functionality, Poliakov discloses the ability of a user to choose a segment of a 3D brain surface model to be masked. As a result, the server sets to invisible the facets within the segment to be masked. (*See* Poliakov, p. 535 "Java-based applet"). The user uses axial, saggital, and coronal sliders to select three cutting planes, which are used by the server in the masking process. However, one of ordinary skill in the art would understand that this functionality is well known in the art and is common to most 3D modeling programs. That is, the manipulation of a volume (e.g. identifying cut planes, making a certain volume transparent, etc.) is well known. It seems the Examiner has taken the cited

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portion of claim 1 out of context. Claim 1, as a whole, allows the user to adjust the primary parameter, on which a primary result is determined, to determine a secondary result. Modifying the different views and defining cut planes in a 3D object is not the same as adjusting a primary parameter of a data set (i.e. the primary data). The 3D image of Poliakov is not reprocessed based on the modification of the view planes and cut planes. Instead, the same 3D image is viewed in different ways. Accordingly, Poliakov also fails to disclose or suggest *"adjusting the primary parameter set on the basis of a user input, the adjusting being within a predetermined range,"* as recited in claim 1.

Furthermore, Applicants respectfully submit that since neither Biswal nor Jesmanowicz adjust any parameters, incorporating the disclosure of Poliakov into Biswal and/or Jesmanowicz is improper.

Applicant, therefore respectfully submits that Biswal, Jesmanowicz, and Poliakov, alone or together, fail to disclose or suggest *"adjusting the primary parameter set on the basis of a user input, the adjusting being within a predetermined range; reprocessing the primary data on the basis of the adjusted primary parameter set to determine a secondary result,"* as recited in claim 1. Applicant, therefore, respectfully requests the withdrawal of the 35 U.S.C. § 103(a) rejection of claim 1 and its dependent claims 2- 6.

Independent claims 7 and 8 recite limitations substantially similar to those of claim 1. Therefore, Applicant respectfully requests the withdrawal of the 35 U.S.C. § 103(a) rejection of these claims for at least the foregoing reasons presented with regards to claim 1.

CONCLUSION

In light of the foregoing, Applicants respectfully submit that all of the presently pending claims are in condition for allowance. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

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